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ABSTRACT

The theme of the 1983 Australian and South Pacific External Studies Association concerned developing efficient teaching-learning systems and efficient management systems. Such an emphasis on efficiency was symptomatic in the United States' educational arena to a commitment to the practices of scientific management. The central role accorded to efficiency by some theorists of educational administration is illustrated by educational principles that use the term "raw materials" for students and "worker" for teachers. Business ideology still dominates Western discourse and those in the education sector still perceive themselves and their institutions as vulnerable to it. Institutions that provide distance education materials feel even more vulnerable than do those that maintain a more cloistered and discrete relationship with their students. The methods adopted in a standard approach to distance education materials resemble the methods of scientific management. In order to complete materials successfully, students are required to submit to an "if you can't beat them, join them" approach because the materials fail to acknowledge the centrality of the possible contributions students can make. Issues such as qualitative, as opposed to quantitative, efficiency have not been sufficiently addressed in discussions about efficiency in distance education methods. Differing political commitments generate differing standards and measures of efficiency. (10 references) (CML)

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DISTANCE EDUCATION, EFFICIENCY AND SCIENTIFIC MANAGEMENT: SOME DOUBTS

This is a substantially revised version of a paper presented at the 1983 Forum of the Australian and South Pacific External Studies Association.

The current Review of Efficiency and Effectiveness by the Commonwealth Tertiary Education Commission has prompted me to make the paper accessable through this the ESTR Occasional Papers series.

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ABSTRACT

In this article I provide an argument designed to display that an awareness of various analyses of Scientific Management could aid our understanding of processes occurring in distance education.

Certain features of a work by R.E. Callahan entitled 'Education and the Cult of Efficiency' are presented which provide a conceptual context for the discussion.

Attention is directed towards an alternative conceptual formulation of efficiency and to the need for continuing research into the professionalization process associated with distance education.

The call for papers for the 1983 Australian and South Pacific External Studies Association (ASPESA) Forum was as follows :

> Forum papers focussing on challenges related to developing efficient teaching learning systems, efficient management systems, and exploiting new technologies should be presented from one of the following perspectives, that of the student, teacher, administrator.

In this article (a much revised version of a paper presented at that Forum) I engage in an inquiry stimulated by those themes and perspectives. I intimate doubts and uncertainties which I believe need to be shared. Hence the article is grounded in a notion of confiding as trusting rather than in a conception of confidence as expertise.

That call for papers, and its effort to encourage us to focus upon challenges related to developing efficient teaching learning systems, efficient management systems, and exploiting new technologies, can help to remind us that an act of focussing is at one and the same time an act of blurring for if we focus upon those issues, we may blur other issues to such an extent that they are unlikely to receive any attention. My contention is that the challenge for those of us who are involved in distance education is to resist any impulse to concentrate upon efficiency if that impulse results in the exclusion of any consideration of the goals of the institutions concerned. In order to provide a conceptual framework for the argument in this article I would like to commence by directing attention to another time, another place, and

another set of social institutions. I anticipate that by doing this we will more readily recognize certain features of our own situations which, precisely because they are seemingly everpresent and perfectly usual, are not subjected to careful analysis.(1)

Raymond E. Callahan in his work "Education and the Cult of Efficiency" provides an analysis of the manner in which F.W. Taylor's system of industrial management (i.e. scientific management) came to dominate the educational scene in the U.S.A., and of its consequences. To summarize Callahan (1962) argued that the purported efficiency of industry where 'scientific management' methods had been used was increasingly used as a yardstick by critics of education, and in this hostile environment school administrators frequently tried to disarm their critics by introducing surveys and efficiency measures themselves before they were enforced from the outside. Having accepted 'efficiency' as the goal in this way the administrators found themselves in an ever worsening situation from which they could not draw back. The financial costs of education had been brought to the forefront of the community's attention and the measures which were then to be emphasized were frequently oriented towards efforts (however short-sighted) to save tax-payers' money. Annual school reports to the community came increasingly to appear like the annual accounts of business concerns. The level and form of criticism generated a lack of trust which in turn strengthened the position of the Inspectorate and played a part in reducing administrative and teaching roles to low trust, low status positions.

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(1) As P.D. Anthony points out in *The Ideology of Work* (Anthony, 1977:271)

> ...an ideology which has been successful in achieving its manifest purpose of influencing the sentiments and actions of others...may become difficult to identify when it ceases to be challenged

Educators came to be viewed as technicians producing an input such as was demanded by the industrial sector and, as a result, responsibility for deciding upon the content of the curriculum shifted from the educators to industry. School boards changed in their character and far more space was given to business interests. Once the business ethos was accepted it wasn't long before the efficiency expert was followed into the school by the public relations officer and various advertising strategies were used to promote goodwill in the community.

All of these changes were taking place in a period when increasing stress was placed upon the keeping of records and reports, surveys and efficiency tests, ratings scales and detailed financial accounts all of which were, it was supposed, being designed and used in a scientific fashion. Of course, given the economic situation the research which was actually engaged in was woefully inadequate although Taylor in the industrial field, even if mistaken in his overall assumptions, was certainly very meticulous about the research he did do. However it was the inadequate research efforts which provided the means for increased competitiveness between schools, between subject areas and between teachers. If an economy measure was seen to be taken in one school (e.g. the dropping of a supposedly expensive subject, or one with a low enrolment) then other schools would be expected to follow suit, and given the frailty and insecurity of the school administrators' positions they felt obliged to effect economies.

Those administrators who tried to articulate objections to this increasing emphasis upon efficiency were frequently accused of sloppy thinking, of reactionary thinking and even of dishonesty.

The administrators in their effort to reduce their own vulnerability tried to professionalise their role, and this was enhanced by their adoption of various quasi-scientific routines, i.e. of the financial management role; by their efforts to develop and initiate various forms of school surveys and ratings systems; their efforts to routinise and formalise the keeping of accounts throughout the school. They also adopted a more service oriented image in regard to the surrounding communities, and in line with the industrial analogy they placed increasing emphasis upon ensuring full utilization of plant. All of this did give them some general approval, but they remained vulnerable, for they still needed more money to run the schools and they were in effect in an impossible position. A major consequence of the line they adopted was their rapidly diminishing popularity with their teaching staff.

Teachers in this period saw responsibilities being taken from them which resulted in a great loss of autonomy and in changes in teacher training methods. Increasingly they were given detailed instructions of what and how they were to teach; standardisation of methods was paramount; measurement, precision and an increasing emphasis upon 'efficiency' within the classroom were the norm and all of this was occurring at a time when larger classes and longer contact hours, which had been instituted as temporary changes, were coming to be treated as established and commendable practices and, of course, the pressure for salary reductions and redundancies was also very real.

In these circumstances and given that students were considered the raw material they, the students, certainly didn't figure as having any likely input into 'managerial' discussions.

By now we have a general feeling for the types of changes Callahan described and the socio-economic environment in which they were taking place, but a specific example of the effort of American educational administrators may add force to this summary. Callahan refers his readers to the work of Franklin Bobbitt, an instructor in educational administration at the University of Chicago, which was published as the Twelfth Yearbook of the National Society for the Study of Education in 1913. Principles commended by Bobbitt (as outlined by Callahan (1962, 81-91) which are of relevance to this argument are as follows, but do bear in mind as you read that the raw materials are children and that the workers are teachers.

> Principle (1) - Definite qualitative and quantitative standards must be determined for the product.
>
> Principle (3) - Scientific Management finds the methods of procedure which are *most efficient for actual service under actual conditions, and secures their use on the part of the workers.*
>
> Principle (7) - The worker must be kept supplied with detailed instructions as to the work to be done, the standards to be reached, the methods to be employed, and the appliances to be used.
>
> Principle (8) - It is a function of the management to discover and to supply the tools and appliances that *are the most effective* for the work at hand.
>
> Principle (11) - In a productive organisation, the management must determine the order and the sequence of all the various processes through which the raw material or the partially developed product shall pass, in order to bring about *the*

> *greatest possible effectiveness and economy*, and it must see that the raw material or partially finished product is actually passed on from process to process, from worker to worker, in the manner that is *most effective and most economical*. (Callahan 1962, 81-91) [My italics]

I believe those principles illustrate the central role accorded to efficiency by such theorists of educational administration, and the following quotation from Callahan's preface illustrates how he accounted for the adoption of these ideas in education :-

> *What was unexpected was the extent, not only of the power of the business-industrial groups, but of the strength of the business ideology in the American culture on the one hand and the extreme weakness and vulnerability of schoolmen, especially school administrators, on the other.* (Callahan 1962, Preface)

Now I imagine that few readers will fail to detect how strongly the situation Callahan described resonates with dominant themes in and around post-secondary education today, and that is no surprise for business ideology does still dominate Western discourse, and those in the education sector do still perceive of themselves and their institutions as vulnerable. Indeed institutions which provide distance education materials, rightly or wrongly, I suspect, feel even more vulnerable than do those institutions which maintain a cloistered and more discreet relationship with their students. Paradoxically it is or was the conventional post-secondary institution which in some ways invoked distance from the community in order to protect its practices.

This is neatly summed up in the town-gown metaphor which displays the strength of social distance in a context of close geographical proximity. However the point regarding the providers of distance learning materials is that the method of distribution of materials to students is such that an overtly protective or defensive approach is no longer feasible.

But this is only part of what I want to say in relation to distance learning materials, for the major feature of my argument is to display how closely the methods adopted in a fairly standard approach to distance education resemble the methods of scientific management.

In this section I will begin by offering a very brief analysis of a specific set of distance learning materials.

The Extract which is presented below is drawn from a booklet entitled *Thinking about Objectives* produced by the Council for Educational Technology in Britain as part of a distance learning course entitled *How to Write a Distance Learning Course*. That publications and views of this type may well have a wide influence is illustrated by the fact that the work was reviewed by Alistair Inglis of Toowoomba in *Distance Education*, Vol 2 No. 2, September 1981.

Extract

SAQ 2. Now complete the table below which summarizes the case we have made for objectives. Please add any additional points which you identified and we fail to mention.

OBJECTIVES ARE IMPORTANT BECAUSE:

1. They make teaching intentions [ ]

2. They encourage a thoughtful response to the [ ] [ ] [ ]

3. They favour precision and [ ]

4. They involve the single minded pursuits of [ ]

and [ ] targets.

5. They enable learning to be [ ] [ ]

and courses to be [ ] [ ]

6. They help when the student is [ ]

and they also help him to [ ] his own progress.

ANY OTHERS?

(Gillam, 1980:13)

Bear in mind that this series of booklets was devised for the types of people working in post-secondary institutions who would be developing

distance learning courses (i.e. lecturers at colleges) and that the answers to the questions asked were provided in the preceding two or three pages of the booklet (Gillam, 1980). Perhaps I am off-track, but the exercise which the reader is being asked to engage in here seems to me to be demeaning and constraining as were the routines which Taylor demanded of workers and as were the routines which followed from the limitations placed on teachers mentioned in the previous sections.

The type of exercise which is illustrated in the above extract seems to me to involve an all or nothing form of commitment, either we decide to play the game in the way the course designer intended, or we may as well abandon the course. This mirrors the abrupt psychological wrench which Braverman (1976:44) points out is required of the subjects of Taylor's methods. This act of submission in which the student is in a sense required to comply with the proverb "if you can't beat them join them" is I think extraordinarily damaging in the context of the relationship between an isolated student and an institution. However, the apparent clarity, simplicity and straightforwardness of this type of exercise are convincing, just as was Taylor's presentation, but just as he hid from view (failed to analyse) the most essential aspect of the worker's situation, i.e. the relationship between employee and employer, so also does this type of educational approach deflect attention from the relationship between the student and the teacher/institution which it treats as a given; which it takes for granted.

But what of the perspectives, commended in the call for papers i.e. the student, the teacher or the administrator's perspectives? Do these take for granted the very issue we should be questioning? This of course depends upon whether we treat them, the commended perspectives, as

pointers which set us off on an inquiry in which they themselves may come into question or whether we treat them as secure and definitive assumptions which we need not question, i.e. as axiomatic. As might by now be expected this article is grounded in the former approach. My contention is that a strongly directive approach of the kind illustrated above in the Extract from the C.E.T. Booklet is wasteful in the extreme for it fails to acknowledge the centrality of the possible contributions students can make. This is illustrated by the lowly place accorded to the 'any others' space, and by the fact that the entry made will be effort to no avail, for the exercise is self-assessed, it goes nowhere and is therefore not heard by the course writers, or anyone else other than the student! An argument might have been possible in the past, when the student body was supposedly a relatively homogeneous mass of recent school leavers that their opinion was unlikely to be of value. Such an argument even in that context seems to me, to say the least, highly questionable. In the current distance education context where the students frequently range from teenagers to the retired, come from a very wide range of social and occupational roles and from widely differing geographical locations, such an argument seems absurd.

The type of approach illustrated in the above extract leads both students and teachers to suppress their doubts and insecurities. It leads to a lack of confidence of the type that was commended at the beginning of this paper, and it is my belief that that trust is an essential ingredient of a friendly relationship which is itself that relationship which epitomizes the situation in which learning takes place, in which potential is educed. However, by reading the following extract from Bowles and Gintis (1976) we may begin to grasp more firmly not only why this trust and friendship may be excluded, but also why the

decision to accept as given the relationship between administrator, teacher and student is far from being merely technical and politically neutral.

> The educational system, basically, neither adds to nor subtracts from the degree of inequality and repression originating in the economic sphere. Rather, it reproduces and legitimates a pre-existing pattern in the process of training and stratifying the work force. How does this occur? *The heart of the process is to be found not in the content of the educational encounter - or the process of information transfer - but in the form: the social relations of the educational encounter. These correspond closely to the social relations of dominance, subordination, and motivation in the economic sphere.* Through the educational encounter, individuals are induced to accept the degree of powerlessness with which they will be faced as mature workers. (Bowles and Gintis, 1976:265) [My italics]

Having displayed how the set of themes and the set of perspectives for the 1983 ASPESA Forum were rather more closely intervoven than it might at first have appeared I would like to provide some further comments to support my view that careful and detailed analysis of the parallels between 'Scientific Management' and distance education would help us to reconsider the direction being taken in distance education institutions. This is particularly important in a context (such as the Australian Context) where most frequently institutions are involved in both distance education and 'traditional' on-campus teaching for it is my impression that academics are injecting many of the lessons (both

good and bad) which they are learning from distance education into on-campus teaching routines. If this is so the responsibility which rests upon the personnel within the distance learning system to generate processes which will be socially beneficial rather than socially costly is all the greater.

In support of my contention that industrial and business ideology is an extremely significant influence upon distance education I would direct attention towards the following remarks from characters who are not without influence in this educational arena.

(1) Perry, as quoted by Keegan in his paper *On the Nature of Distance Learning* when speaking about the British Open University says:-

> From the outset we foresaw that we would be operating not only an academic establishment, but, in a very real sense a sort of *commercial* establishment as well. The latter would require a form of government quite different from that which was common in conventional universities. (Keegan 1980:26) [My italics]

(2) Daniel and Stroud (1981) state that:-

> Two particularly important goals were to serve the educationally and socio-economically underprivileged *and to reduce the costs of undergraduate education*. The first goal generated an extensive literature based on the writings of Naomi McIntosh (see e.g. McIntosh (1980)) while Wagner (1973, 1977) showed that no matter how the analysis was done the

> Open University provided education at a substantially lower cost than conventional universities. Extending Wagner's analyses Snowden and Daniel (1980) showed that even in rather small distance education systems per capita costs were competitive with classroom instruction. (Daniel and Stroud, 1981:149) [My italics]

(3) Keegan's (1980) final note to *On the Nature of Distance Learning*:

> The structure of distance teaching is to a large extent governed by the principles of industrialisation; especially those of rational planning, division of labour, and mass production. (Keegan, 1980:39)

An insight into the more specific kind of analysis that is generated given an acceptance of this type of business oriented conceptual framework is Greville Rumble's article *Evaluating autonomous multi-media distance learning systems; a practical approach*.

I should mention that Rumble (1981) differentiates in that article between efficiency and effectiveness in the following manner:-

> Central to any evaluation are the notions of effectiveness and efficiency. Effectiveness is concerned with how well or badly something is done, in qualitative terms. Efficiency is concerned with the resources used in achieving a given qualitative level of success. (Rumble, 1981:66)

However, it seems to me that this distinction doesn't help us to resolve our problem, for as Rumble goes on to say :-

> The concepts of effectiveness and efficiency presuppose the existence of standards against which the performance of the object under evaluation can be assessed. (Rumble, 1981:66)

Here is the crux of the issue, for the standards for human activity do not exist in this manner, i.e. unlike those for 'objects' they are always products of thought/choice, and they are never fixed. Indeed, Taylor's problem was perhaps that he treated the particular social relations of production he came across as fixed, when they themselves should have been the subject matter for analysis:

> with regard to the conditions of production. It (scientific management) starts, despite occasional protestations to the contrary, not from the human point of view but from the capitalist point of view, from the point of view of the management of a refractory work force in a setting of antagonistic social relations. It does not attempt to discover and confront the cause of this condition, but accepts it as an inexorable given, a "natural" condition. It investigates not labor in general, but the adaptation of labor to the needs of capital. It enters the workplace not as a representative of science, but as the representative of management masquerading in the trappings of science. (Braverman, 1976:72)

The same restriction is clearly evident in Bobbitt's third principle (Callahan, 1962) which is that :-

> Scientific Management finds the methods of procedure which are *most efficient for actual service under actual conditions, and secures their use on the part of the workers.* (Callahan, 1962:86)

However, Bobbitt, by refering us to the most efficient procedures and to the securing of their use by workers, also inadvertantly draws our attention towards a potentially fruitful conceptual distinction which has been formulated in a different context by David M. Gordon. The conceptual distinction is that between quantitative and qualitative efficiency and is outlined in the following extract from Gordon :-

> (3) The "efficiency" of a production process, therefore, can be considered conceptually in two ways: efficiency has both a *quantitative* and a *qualitative* aspect.
> In general, a production process is *quantitatively* (most) efficient if it effects the greatest possible useful physical output from a given set of physical inputs (or if it generates a given physical output with the fewest possible inputs). I can think of no theoretical reason why there would not be many (if not an infinite number of) possible production processes with equivalent quantitative efficiencies at any stage in the natural development of the means of production - in physical terms - in any given society.

> In class societies, a production process is *qualitatively* efficient if it best reproduces the class relations of a mode of production. In more specific terms, a production process is qualitatively (most) efficient if it maximizes the ability of the ruling class to reproduce its domination of the social process of production and minimizes producers' resistance to ruling class domination of the production process. Given the opposition between the ruling class and direct producers, it would be surprising if production processes in a social formation *stably* dominated by a mode of production did not tend toward the most qualitatively efficient forms possible. (Gordon, 1976:22)

My contention is that issues such as that of qualitative efficiency have not been addressed sufficiently in discussions about the efficiency of distance education systems and methods, for efficiency has normally been treated as synonymous with quantitative efficiency to use Gordon's term.(2)

Gordon goes on to argue that :-

> In class society [ ] a production process is qualitatively efficient if it best reproduces the class relations of a mode of production. Along the path of socialist transition, in reverse, a production process embodies socialist (qualitative) efficiency if it best supports movement along the path towards a classless society.

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(2) Clearly though both Bobbitt and Rumble use the notion qualitative they use it in a different sense to that of Gordon.

Whilst these statements are blunt and perhaps doctrinaire the point I am emphasizing through their use is that differing political commitments generate differing standards and measures of efficiency. This applies in education as elsewhere and at the very least we should display our awareness of that fact. The conference themes and perspectives mentioned at the outset which are a contemporary statement of the interests of a professional association do not readily point us in that direction. Why should this lack of specific direction occur? Once again the consideration of scientific management proves fruitful for in a recent discussion Peter F. Meiksins indicates how :-

> the domestication of the American engineer involved two important sets of factors. First, certain characteristics of the social structural position of engineers made this domestication possible; for example, their authoritative role in production. At the same time, the defeat and cooptation of the potential threats to capitalist domination implicit in scientific management, and even in early engineering professionalism, and the rise of an emasculated professionalism (encouraged by the business community) among engineers were also important to this process. The combination of these two sets of factors explains why, at least temporarily, the process of class formation engendered by capitalist relations of production has been blocked among American engineers. (Meiksins, 1984:204)

The domesticated nature of distance educationalists, as is illustrated in this article by the professional association's decision to focus upon

efficiency in the first place, and then to ignore issues such as qualitative efficiency, indicates the need for detailed and careful sociological analysis of this sub-set of education's "engineers". In this way the potential of distance education may not be limited by the covering over of its radical possibilities.

SUMMARY

We set out from the themes of the 1983 ASPESA Forum by indicating how the focus upon efficiency was restrictive and then displayed how a similar emphasis upon efficiency in the American educational arena was symptomatic of a commitment to the practices of scientific management. Similarities of the general context were alluded to and then a parallel was drawn between a fairly standard approach to the design of distance education materials and the methods of scientific management. Attention then shifted from the themes of the conference to the perspectives commended such that an underlying similarity of interest was revealed. Further examples of the influence of industrial ideology on distance education were supplied through which the argument developed in such a way as to display an alternative and more conceptually acute notion of efficiency which re-emphasized the political nature of the debate. A possible account of the reasons for the ostensive depoliticization of the objectives of distance education professionals was then intimated through reference to a need for comparison between the specific professionalization process in which the mechanical engineers who were concerned with scientific management were engaged, and the current professionalization process in which we as distance educationalists have been and are involved.

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